

Amdt. dated August 13, 2004

Reply to Office action of February 25, 2004

REMARKS/ARGUMENTS

Reconsideration of the application is requested.

Claims 1-28 remain in the application. Claims 1 and 24 have been amended.

More specifically, claims 1 and 24 have been amended in response to the rejection over the various references. As will be pointed out in the following, the anticipation as well as the obviousness rejections are simply coincidental and, as will be further pointed out, the rejections no longer apply to the amended claims 1 and 24. In that regard, reconsideration of the application on the basis of the amended claims is requested.

We first address the rejection under 35 U.C.S. § 102 of several of the claims as being anticipated by Ghaem et al. (U.S. 5,457,447, hereinafter "Ghaem").

Ghaem's structure is indeed similar in some respects to the configuration according to claim 1 and Ghaem further suggests some of the steps provided in the method claims. However, the similarities are rather coincidental and the basic concept of the invention is neither anticipated by nor obvious over Ghaem. The instantly claimed invention has at its core the

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feature that the device that will render the response signal does not require a power source. The entire energy supply required for operating the responder, as it were, is derived from the electromagnetic radiation received from the requestor. The configuration therefore has a receiver that receives electromagnetic radiation and a transducer that is coupled to the receiver and converts the electromagnetic radiation into storable secondary energy. In the preferred embodiment of the invention, the secondary energy is electrical energy that is stored in a capacitor, it is heat energy that is stored in a heat reservoir or it is mechanical energy that is mechanically stored. The secondary energy which is derived from the electromagnetic energy and which is derived entirely from the electromagnetic energy is stored in the storage device. Once the amount of the secondary energy - the energy derived from the electromagnetic radiation - exceeds a threshold value, the secondary energy is output to the further elements and used to transmit a signal to the requestor.

The claims have now been amended in an effort to very clearly define the fact that the energy that is stored in the storage device and which is stored and accumulated until the threshold value is reached, is entirely derived from the electromagnetic radiation.

) The reference Ghaem has a converter for converting electromagnetic energy into storable energy. In fact, Ghaem provides for a variety of energy sources, namely a source which converts vibrational energy into electric current, a converter that converts incident heat energy into electric current, a converter that converts incident infrared energy into electric current and converters that convert incident low-frequency and high-frequency radio frequency energy into electric current. The electric current of each of these converters is stored in a capacitor. The capacitor, similar to a preferred embodiment of the instantly claimed invention can be read on the storage device. The primary difference between the reference Ghaem and the instantly claimed invention is found in the fact that our capacitor, or more generally our storage device, practically overflows and transmits a response signal after the threshold value (the filling level required for the required energy) has been reached. Ghaem instead sends out a signal in response to a request and not only after a threshold value has been reached by the respective storage device.

) The principle behind Ghaem is that the device has a power source, for instance the power source 10, which is provided with the above-noted variety of converters. The concept is to

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) provide energy in a variety of environments. For example, in some instances, light energy may be available for conversion in a photovoltaic cell, while in other circumstances such visible light is not available and the system would not properly operate. For that purpose, Ghaem provides for the various converters which, for instance, derive power from vibrational energy (e.g., sound waves or pressure) and/or from infrared radiation and so on. Ghaem thus maintains the energy that is available, i.e., the electrical energy stored in the capacitor, just below a required threshold value. In order to then trigger the transmission of the configuration, only a very small additional amount of energy is required that then lifts the electrical energy above the threshold value which, in turn, then initiates the transmission. In this regard, the request signal is required before the transmission can occur and, also, the transmission will occur each time the request signal has been sent because the power supply 10 maintains the storage level of the capacitor at just below the threshold value. The reason for this is that Ghaem's technology deals with ID tags that should be enabled to be read by a reader without injecting an extraneous amount of energy for reading the ID tag. The ID tag thus in effect is provided with a permanent power source while the instantly claimed invention ) does not require a power source.

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Reference is had to the explanation provided in Ghaem concerning his embodiment illustrated in Fig. 6. There, the capacitor 54, which is maintained by the power source at just below the threshold value, is coupled between the B+ terminal 56 and ground. The energy converters provide the electric current to charge the capacitor 54. The energy supply for the portable electronic device is shown at line 70 which comes off the B+ terminal. In a similar embodiment, illustrated in Fig. 8, the capacitor 120 is maintained just below the threshold value that is required for transmission. Upon receiving a request signal at the antenna 112, the capacitor 122 pulls the terminal 56 up to just above the threshold value, upon which the transmission of the response signal takes place. That is, in this case the power source array in effect provides the majority of the energy required for the response signal transmission and the reader triggers the response by injecting a very small amount of energy.

The Examiner specifically directed applicants' attention to the embodiment of Fig. 9. Once more, an outside trigger triggers the response signal and the required energy, that is at least the majority of the required energy, is provided by the power source. In this case, a user may deform the power source 12 "to provide vibrational energy to the energy converter 26," col. 9, lines 39-42, which then triggers the

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transmission. Once more, this is not exclusively electromagnetic radiation which fills the capacitor until the threshold amount is reached before the transmission is effected. Instead, the embodiment of Fig. 9 requires the standby power source which maintains the storage device, i.e., the capacitor 148 charged to just below the threshold value and then requires the trigger by compressing the power supply by a user.

None of the embodiments of the reference Ghaem can be read on the claimed invention as it is recited in claims 1 and 24. All of the examples provided by Ghaem deal with the power source 10 acting as the main power source with a power level just below the threshold and an additional injection of energy or a simple trigger which triggers the response signal. That is, at any time the request signal is received, the device is ready to respond and thus responds.

The additional references and the various combinations of prior art have been carefully reviewed as well. Firstly, there certainly cannot be found any type of hint towards modifying the primary reference Ghaem. The essential teaching of Ghaem, furthermore, would be destroyed by modifying the same to arrive at the claimed invention, because Ghaem deals with providing the majority base power which then only requires a

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) slight power level shift to trigger the response. Secondly, none of the secondary references make up for the shortcoming of the primary reference because none of the secondary references provide for the primary feature of the claimed invention which utilizes electromagnetic radiation, its conversion to secondary energy and the utilization exclusively of secondary energy to supply the device to respond with the response signal.

In summary, none of the references, whether taken alone or in any combination, either show or suggest the features of claim 1 and 24. These claims are, therefore, believed to be patentable over the art and since all of the dependent claims are ultimately dependent thereon, they are believed to be patentable as well.

In view of the foregoing, reconsideration and allowance of claims 1-24 are solicited.

) Petition for extension is herewith made. The extension fee for response within a period of three months pursuant to Section 1.136(a) in the amount of \$950.00 in accordance with Section 1.17 is enclosed herewith.

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Please charge any other fees which might be due with respect  
to Sections 1.16 and 1.17 to the Deposit Account of Lerner and  
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Respectfully submitted,



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WHS:tk

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